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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,460	12/03/2004	Shusaku Yoshida	Q85159	2870
65565	7590	11/23/2007		
SUGHRUE-265550			EXAMINER	
2100 PENNSYLVANIA AVE. NW			MULLINS, BURTON S	
WASHINGTON, DC 20037-3213				
			ART UNIT	PAPER NUMBER
			2834	
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			11/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/516,460

Applicant(s)

YOSHIDA, SHUSAKU

Examiner

Burton S. Mullins

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 27 September 2007 has been considered by the examiner.

### ***Claim Objections***

2. Claim 3 is objected to because of the following informalities: Recitation "a permanent magnet which becomes a magnetic field" is not idiomatic. Appropriate correction is required.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-3 have been considered but are moot in view of the new grounds of rejection.

### ***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Morenz (US 6,067,365). Morenz teaches a voice coil motor of the movable coil type comprising: a stator comprising a permanent magnet 16 (Fig.2), the stator producing a magnetic field; and a movable element of an armature coil (voice coil) 22, wherein a highly rigid reinforcing member ring (annular rigid form) 24, the shape of which is the same as the coil section (i.e., annular or cylindrical, Fig.2), is arranged at an end face of the coil 22, and the armature coil 22 is formed

into a coil-shape having a cavity portion (not numbered, occupied by interior pole piece 18; Fig.2).

6. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Liu (US 6,516,071). Liu teaches a voice coil motor of the movable coil type comprising: a stator comprising a permanent magnet 2 (Fig.2), the stator producing a magnetic field; and a movable element 3 of an armature coil 31, wherein a highly rigid reinforcing member ring (medium) 32, the shape of which is the same as the coil section (i.e. annular or cylindrical), is arranged at an end face of the coil 31 (Fig.2), and the armature coil 31 is formed into a coil-shape having a cavity portion (not numbered, occupied by magnet 2; Fig.2).

***Claim Rejections - 35 USC § 103***

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatch (US 4,144,466) in view of Gabor (US 3,751,693) and Matsumura (US 6,487,053). Hatch teaches a voice coil motor of the movable coil type comprising: a stator comprising electromagnets 12a/12b (Figs.1-2), the stator producing a magnetic field; and a movable element of an armature coil 17, wherein the armature coil is formed into a coil-shape having a cavity portion (not numbered, coil interior, Fig.2), and a reinforcing beam (fin-like portions) 30a-30d made of non-magnetic and highly rigid material is formed at a substantial center of the cavity portion (fins comprise part of fixed support, which maintains actuator 10 in co-axial and rotary alignment

with voice coil motor ; c.3:32-35), wherein the reinforcing beam 30a-30d is fixed to the armature coil (via outer & inner rings 18/19; c.3:50-54) and is operable to move with the armature coil 17.

Hatch differs only in that the electromagnets are not permanent magnets; and the material of the reinforcing beam/fin 30a-30d is not disclosed as being “non-magnetic” per se.

Regarding the former feature, Gabor teaches a voice coil motor including permanent magnets 38a-38d for generating magnetic flux in the air gap to drive the electric coil 31 (c.3:2-27).

Regarding the latter feature, providing non-magnetic beam/fins would have been obvious since one of ordinary skill would have preferred non-magnetic material to prevent stray fluxes from traveling through the carriage body, which would have reduced motor efficiency. Further, carriages made of non-magnetic material are well known. Matsumura teaches a voice coil motor including a carriage 48 for supporting voice coil 41 and made of plastic (c.4:15-16).

It would have been obvious to modify Hatch and provide permanent magnets per Gabor for the field since these are known means for generating magnetic flux in the air gap; and further to provide a non-magnetic beam since this would have prevented stray fluxes, and since Matsumura teaches that a non-magnetic material such as plastic is used for voice coil carriages.

Regarding claims 2-3, Hatch additionally teaches a highly rigid reinforcing ring (outer ring) 18, the shape of which is the same as the coil section 17 (i.e., annular or cylindrical; Fig.2), arranged at an end face of the coil 17 (Fig.2).

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Burton S. Mullins  
Primary Examiner  
Art Unit 2834